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been reported as 30', or 1'10'' per year. At Lincoln Center, from 1874 to 1884, the change was 33', or 3'18'' per year. Observations extending over shorter periods, when coupled with these, make me think that the rate is as above stated, 3' per year.

In order to secure results that can be compared, there ought to be established at each county seat a *true* meridian, permanently marked. The lines should be laid out carefully by competent persons, and with better instruments than are usually found in the hands of surveyors. The State by an appropriation could well provide for the actual expenses of such work, and the University could furnish the instruments and the men to do it. Then each surveyor should receive from the county a just compensation for his labor in taking the quarterly observations, and these should be taken with more system than is now done. To call the attention of the surveyor to the present law is of no avail, as the University has proved by sending out yearly a table of "Pole Star Times" and asking for compliance with the law.

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#### NOTE ON THE SECOND SETTING OF CEMENT.

BY B. J. DALTON AND F. O. MARVIN, LAWRENCE.

It is proposed to study the action of cements, which, after having set, have again been mixed up into mortar and allowed to permanently harden. Some masons claim that this second setting of the cement increases its strength. On looking up what has been written on the subject, we find that modern engineers in their specifications demand that mortar which has set shall not be used. Yet we have found no statement of reasons, nor any record of tests comparing the strength of samples of the same cement; some having set once and others twice. We shall at this time report progress only, as too small a number of briquetts have been broken so far to enable us to draw safe conclusions. A full description of methods and results is then reserved for a future report, merely noticing now that the indications are that, with the cements used, a second setting injures their strength.

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#### A PRELIMINARY STUDY OF "HOT WINDS."

BY SERGT. T. B. JENNINGS,

Signal Corps, Ass't Director Kansas Weather Service.

In the study of this phenomenon, the first question to decide is, what are "hot winds"? A careful search through all the meteorological works at my command fails to reveal any definition. Shall every warm wind that proves a destructive blast to vegetation be termed a "hot wind"? I use the term "proves" under protest, because there are other conditions the effects of which are sometimes ascribed to "that hot wind."

In 1866, my first year in Kansas, we had in the eastern part of the State some "hot winds." During that summer our prevailing wind for about 60 days was southwest, and in that time we had a hot wind of eight days' duration, each day the temperature in Franklin county rising to upwards of 100°, and not falling below 80° during the nights. On the fourth day a long-range thermometer was laid across two sticks about six inches above the ground, on a path where there was not even dead grass. Its mercurial column rapidly extended, until it finally reached the limits of the instrument, 140°, when, after enduring the confinement for a short period, it found escape by bursting the bulb, and ended the experiment. The time was